LG MCC Solution 2000

- Technical Data
- Main Busbar
- Unit
- Unit Position
- Starter Arrangement
- View of Front Cover
- Overall View
- Structure
- Standard Specification Code
- Single Front Type
- Basic Installation Drawing of Solution 2000
- Standard Unit Application Table

Index

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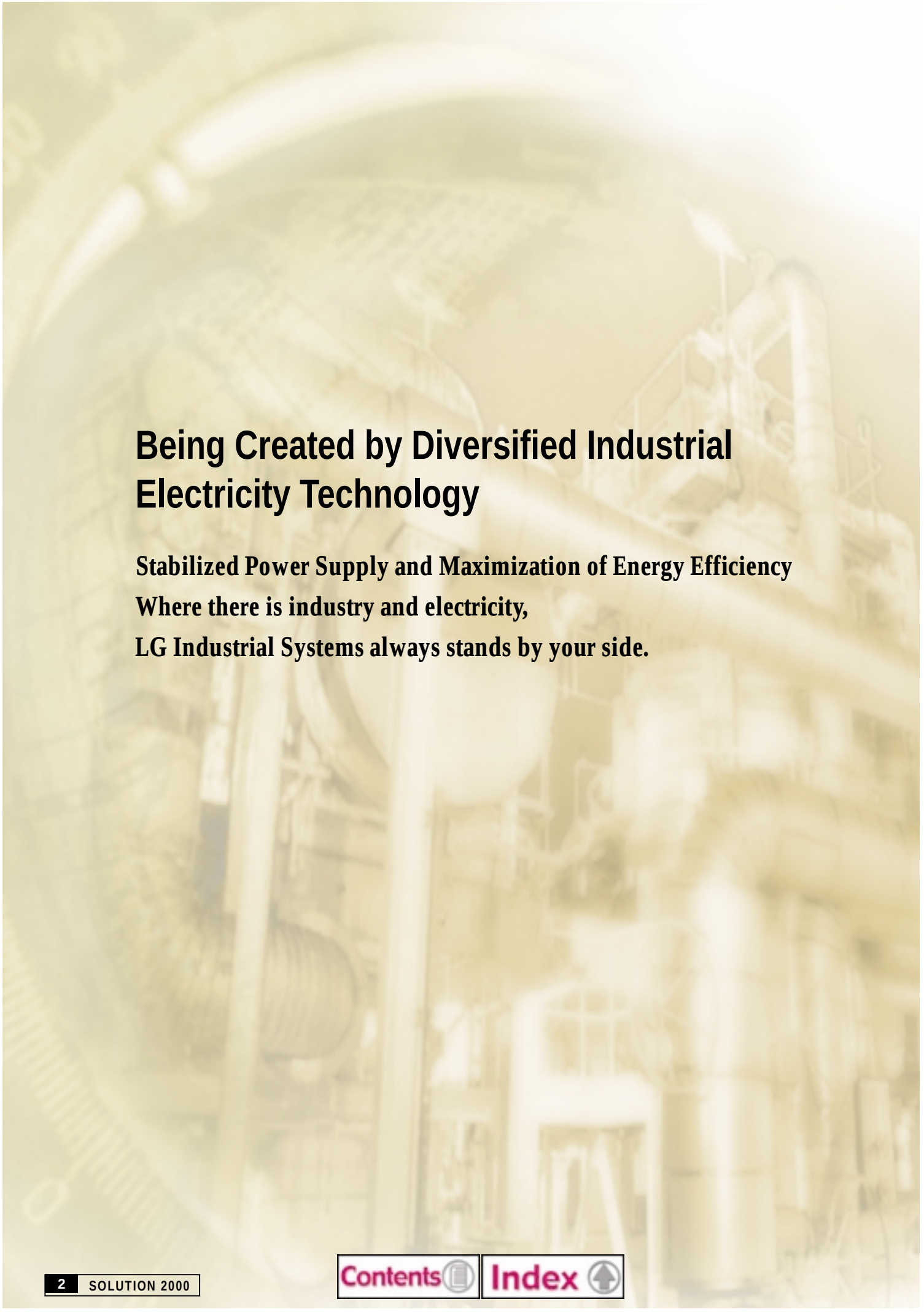
ASTA TÜV CERT

LG MOTOR CONTROL CENTER
SOLUTION 2000

LG MOTOR
CONTROL CENTER
SOLUTION 2000



Being Created by Diversified Industrial Electricity Technology

Stabilized Power Supply and Maximization of Energy Efficiency

Where there is industry and electricity,

LG Industrial Systems always stands by your side.

The modular designed and type tested L. V Motor Control Center type SOLUTION 2000 satisfies the ever-increasing demand for high performance, high reliability, safe operation and versatility required in industrial facilities.

- Single and / or double (back to back) front construction.
- Variable width wire way up to 400 mm with protection against accidental touch.
- Combination of fixed and withdrawable units within the same cubicle.
- 3 ratings of plug-in contacts, 250A, 400A and 600A.
- Fully insulated riser busbar front barrier assembly.
- Protection against accidental touch of energized parts (IP20) without the need of automatic shutters.
- Accessible from front to the compartment for the modules and cabling way.
- Easy and simple rearrangement of module according to the operational requirements without danger and switching-off the switchboard.
- Can be equipped with up to 13 basic modules for motor control and 26 modules for MCCB up to 100A rating.

TECHNICAL DATA

Standard		Type tested LV switchgear and controlgear assembly(TTA) IEC 439-1 BS EN 60 439-1 AS 3439-1 Other national codes on request
Rated voltage		600V AC
Rated frequency		50/60Hz
Main busbar (3/4poles)	**Rated current**	Up to 5000A (above 3000A double busbar)
	Rated short time withstand current(1s)	Up to 80kA
	Peak withstand current	Up to 176kA
Vertical busbar (3/4poles)	**Rated current**	1000A, 1500A
	Rated short time withstand current(1s)	Up to 80kA
	Peak withstand current	Up to 176kA
Vertical control bar (2poles, up to 4poles)	**Rated current**	80A at 380V
Arcing due to internal fault		Tested according to the AS 3439-1, appendix EE
Degree of protection		IP 40 for casing IP 20 for compartment
Overall dimension		Height : 2300mm/ 2200mm Width : 1000mm/ 900mm Depth : 650mm / 1000mm(Duplex)
Thickness of material		Frame : 2.3mm Door / Cover : 1.6mm (2.3mm as option) Top and side plate : 1.6mm
Coating		Frame : LH-AH086-1 / Dark blue Door/Cover : LH-RANTONE 420C / Light Yellow Unit and others : hot dip galvanized steel
Wiring		Main : KIV 3.5mm^2 as a minimum with black color Control : KIV 1.25mm^2
Name plate		Material : Acrylic Letter : Gothic, Black Background : White

MAIN BUSBAR

Main busbars are mounted at the upper and / or middle part of the cubicle.
Main busbar compartment is structurally isolated from unit compartment and cable way to ensure safety.

VERTICAL BUSBAR

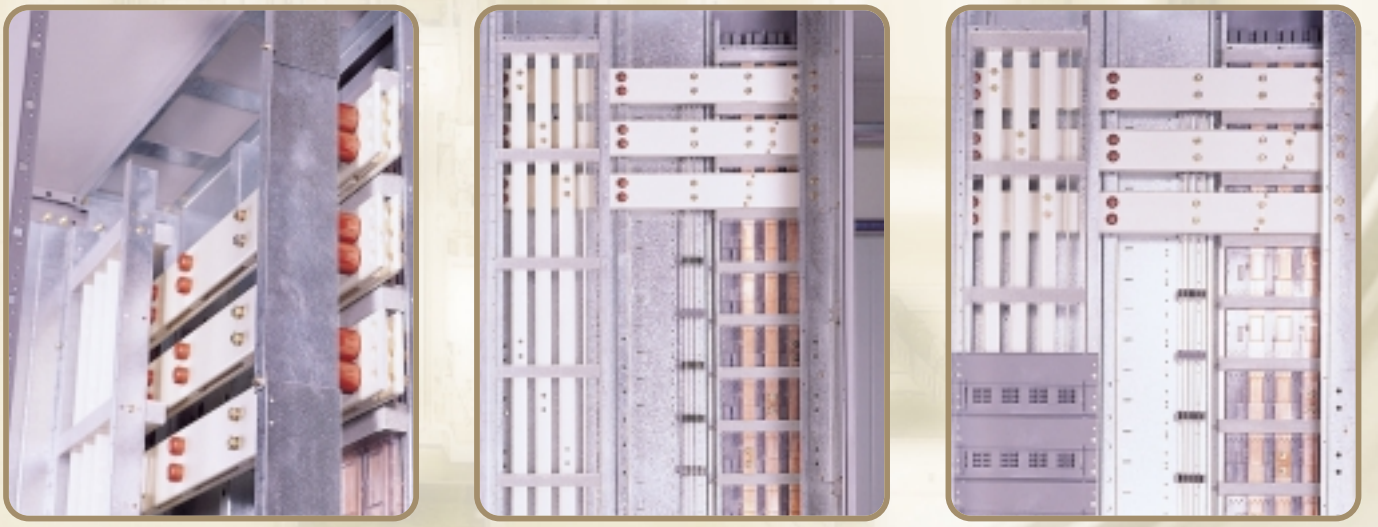
The vertical riser covered with arc proof is in the rear of module compartment.
The plug-in openings finger proof can be covered with automatic shutters as option.

MAIN BUSBAR SIZE (mm^2)

A	Phase (A,B,C)	Neutral (N)	Earth (PE)
1000	75 ×10	40 ×10	40 ×10
1600	100 ×10	40 ×10	40 ×10
2000	2-75 ×10	75 ×10	50 ×10
2500	2-100 ×10	75 ×10	50 ×10
3150	2 ×(2-75 ×10)	2-50 ×10	50 ×10
4000	2 ×(2-100 ×10)	2-75 ×10	50 ×10

VERTICAL BUSBAR SIZE (mm^2)

A	Phase (A,B,C)	Neutral (N)	Earth (PE)
1000	72 ×6	40 ×6	40 ×6
1500	72 ×6+40 ×6	40 ×6	40 ×6



Main and vertical busbar compartment

UNIT

The height of drawable unit ranges from minimim 75mm to maximum 1050mm. The height is increased by 150mm pitches. MCCB, electro-magnetic switches, motor protection relay, auxiliary relays, timer, CT, ZCT, and fuses are placed at the point of unit while main circuit s draw-out plug and control power plug, safety shutter opening guide are situated in the rear. Main circuit 's secondary draw-out plug and control plug are installed on the right side of unit.

Internal view

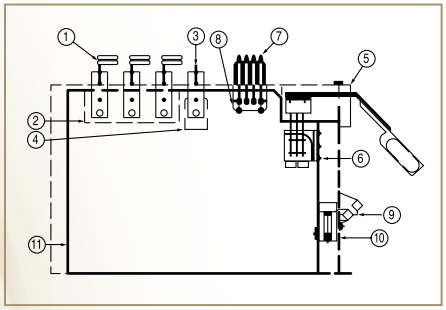
View into the cable compartment

View into

Control and indication
Operation and indication elements are mounted on the front plate of the unit

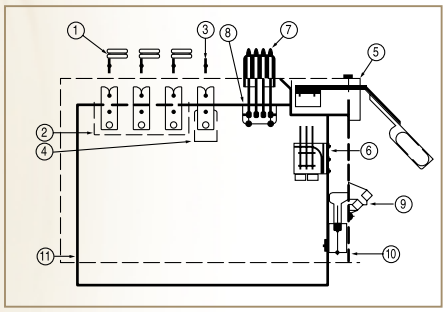
nit compartment

UNIT POSITION



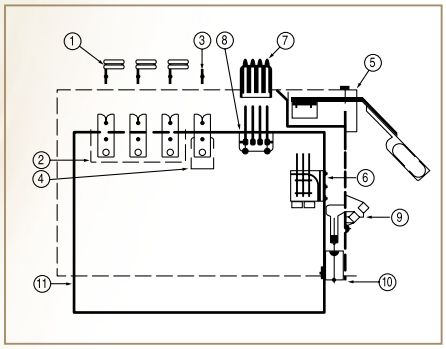
SERVICE POSITION

Main circuit's primary and secondary draw-out plugs, control power plug, control circuit draw-out connector are connected to the power source and load side components while the unit locking device is in the locked position. If locking is not effected securely, the unit might have been positioned incorrectly.



TEST POSITION

Only control power plug and control circuit draw-out connector are connected to the control power source for the test operation. In this position, all output control signals can be checked through the control circuit connector.

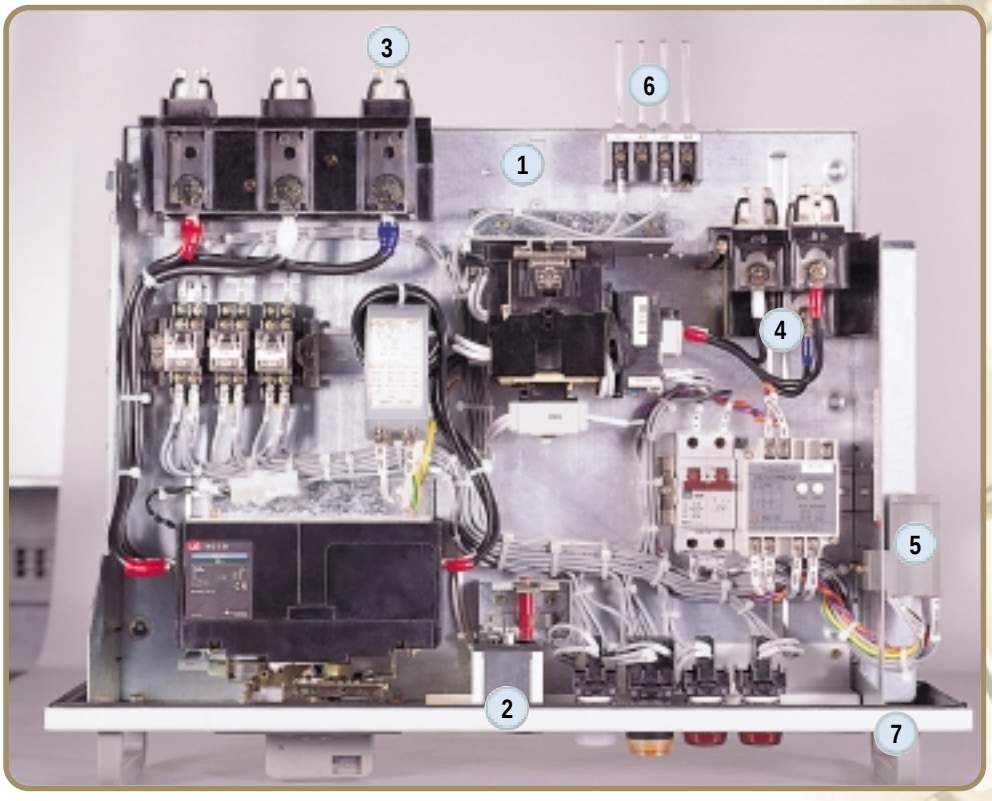


DRAW-OUT POSITION

Main circuit's primary and secondary draw-out plugs, control power plug, control circuit draw-out connector are disconnected in this position. The unit can be completely drawn-out from the cubicle.

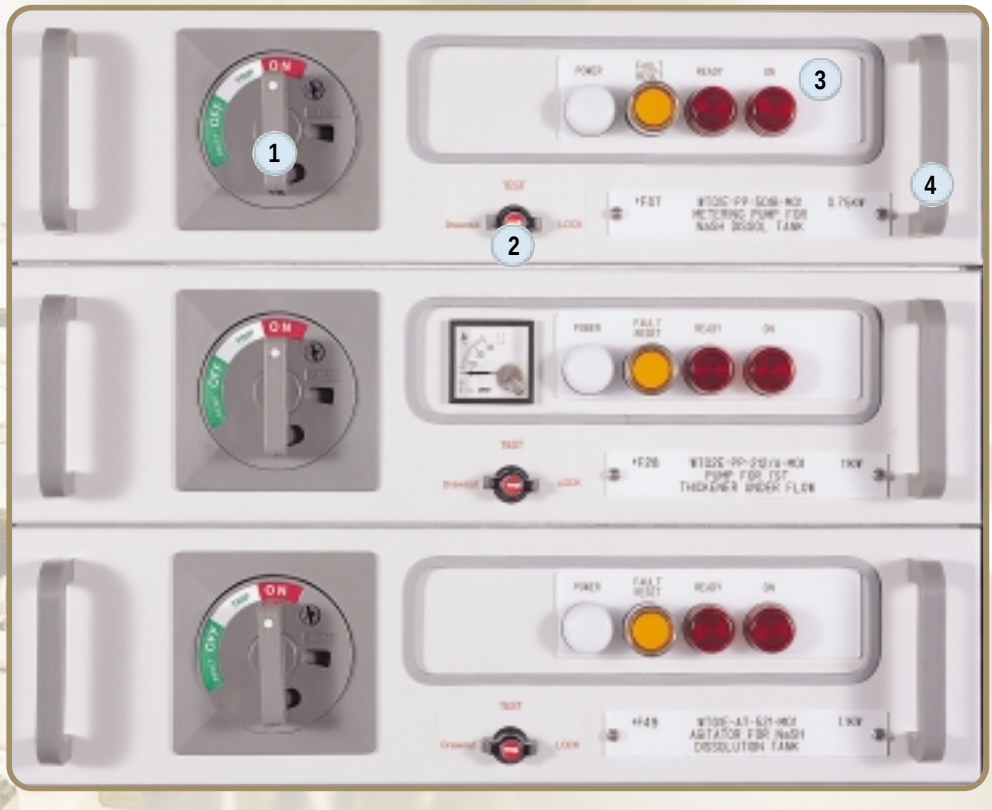
① Vertical busbar
② Power plug for line side
③ Neutral busbar
④ Power plug for neutral
⑤ Fixed-power plug for load side
⑥ Movable power plug for load side
⑦ Control power busbar
⑧ Control power plug
⑨ Plug for control circuit
⑩ Socket for control circuit
⑪ Draw-out unit

STARTER ARRANGEMENT



1. Module base plate
2. Position locking device
3. Power plug (line side)
4. Power plug (load side)
5. 24-pole control plug, connected in cable compartment
6. 4-pole control power plug, connected to the control busbars
7. Cover for operation and indication

VIEW OF FRONT COVER

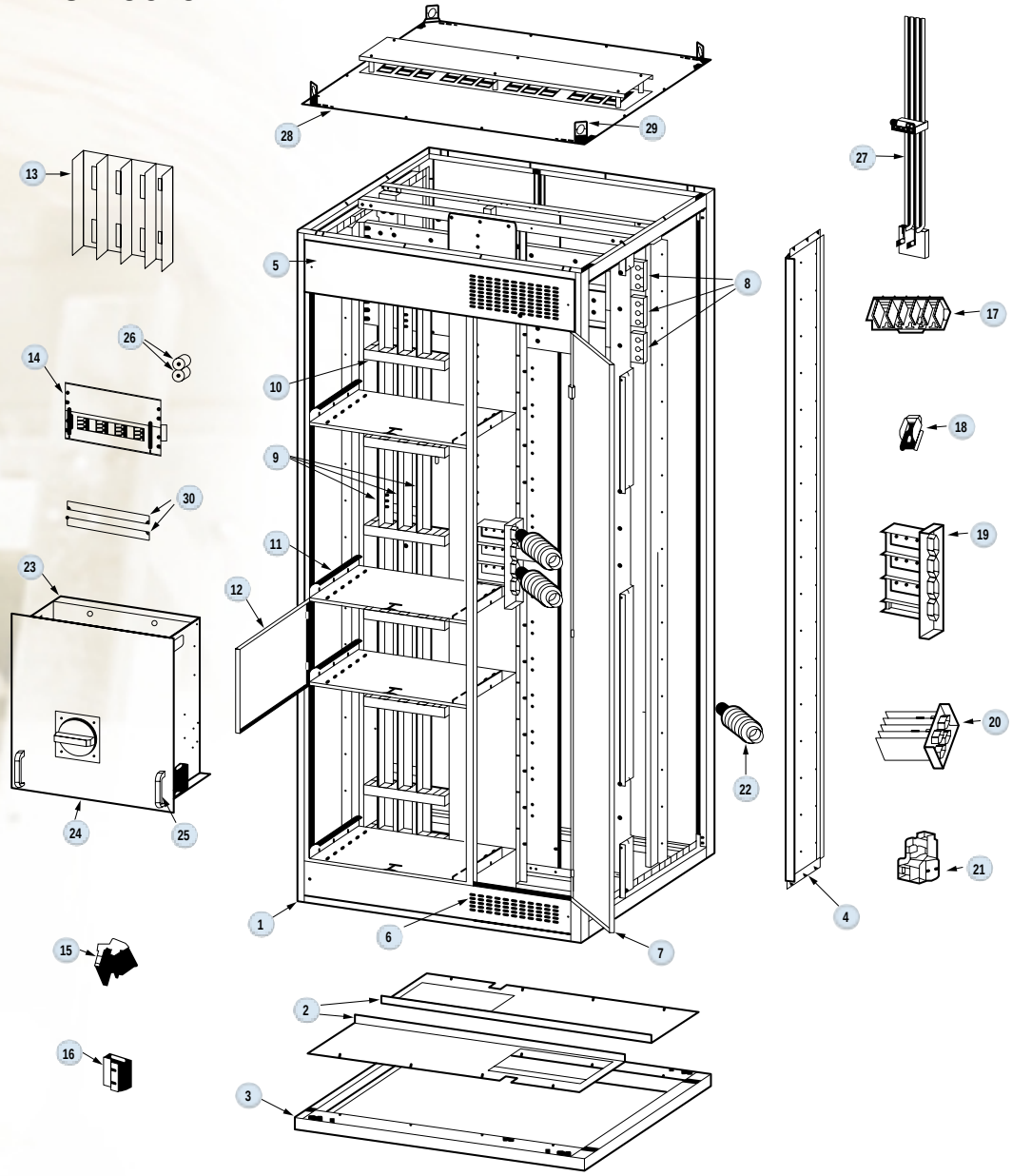


1. MCCB operating handle (Pad lockable in OFF-position)
2. Position locking device
3. Operation and indication plate
4. Draw-out handle

OVERALL VIEW

Contents Index

STRUCTURE

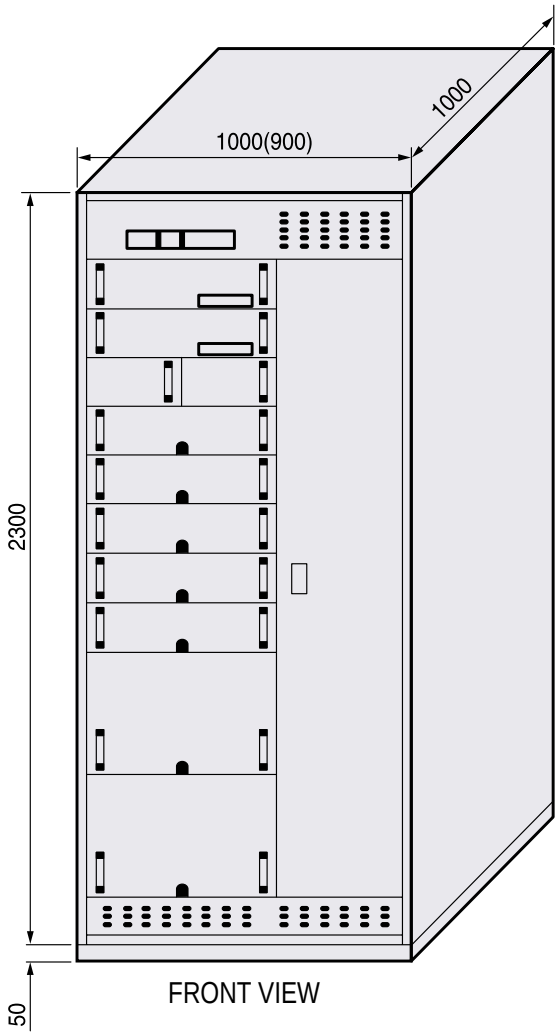


1 Basic frame
2 Bottom plate
3 Channel base
4 Cable compartment partition
5 Upper front cover plate
6 Lower front cover plate
7 Door for cable compartment
8 Main busbars
9 Vertical busbars
10 Vertical busbar clamp
11 Partition plate
12 Door
13 Arc proof barrier
14 Finger proof barrier
15 Plug for control circuit
16 Socket for control circuit
17 Power plug for line side
18 Power plug for neutral
19 Power plug for load side(600A)
20 Power plug for load side(250A)
21 Power plug for load side(125A)
22 Sleeve for cable protection
23 Module
24 Front cover
25 Draw-out handle
26 Insulator power busbar
27 Control power busbar
28 Top plate
29 Lifting lug
30 Safety shutter

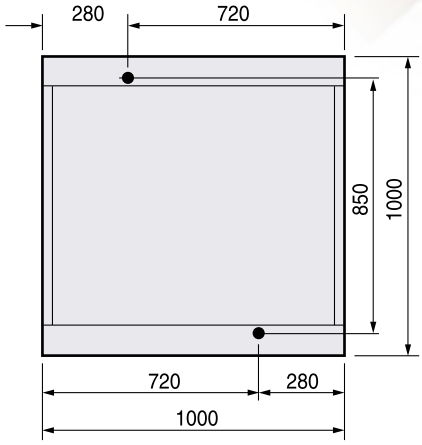
STANDARD SPECIFICATION CODE

Vertical Busbar : 10=1000A 15=1500A
Main Busbar : 10=1000A, 16=1600A, 20=2000A
25=2500A, 30=3000A, 40=4000A
D=Double Front Type, S=Single Front Type
10=Cubicle Width (1000mm), 09=Cubicle Width (900mm)
SOLUTION 2000 MCC

DOUBLE FRONT TYPE



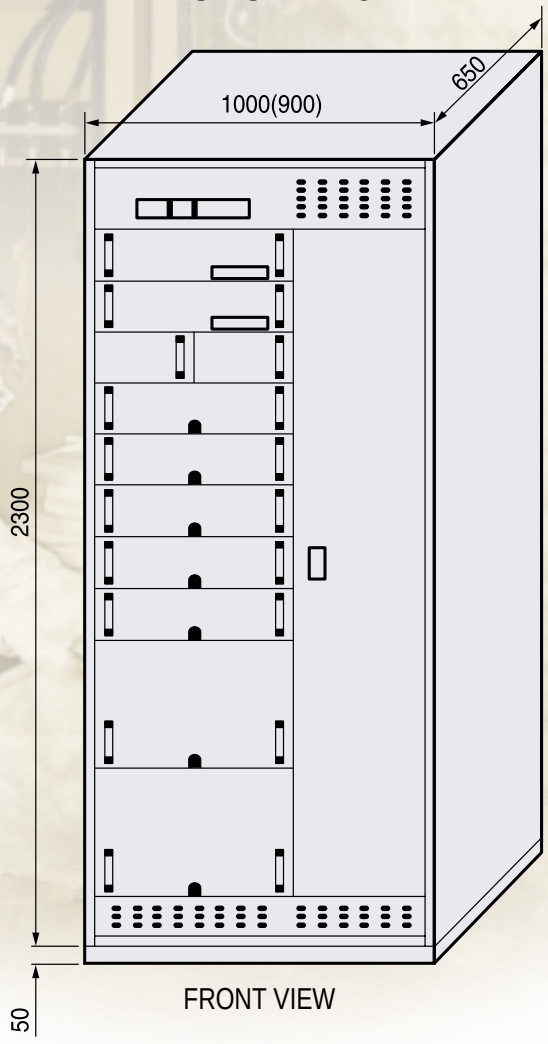
FRONT VIEW



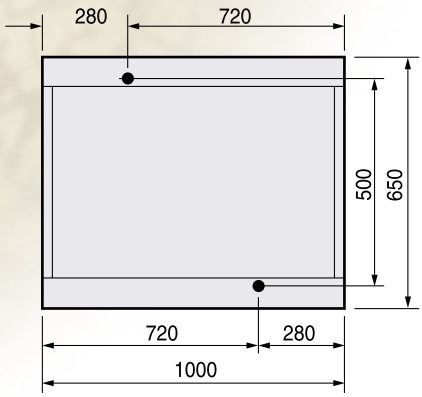
BASE PLAN

Contents Index

SINGLE FRONT TYPE

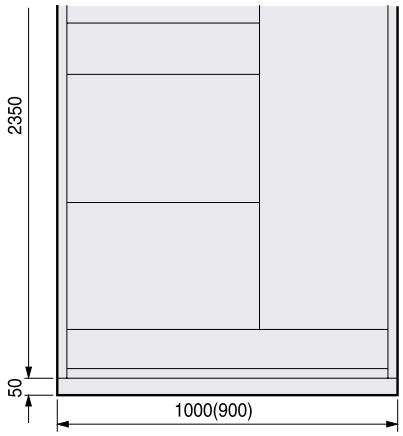


FRONT VIEW

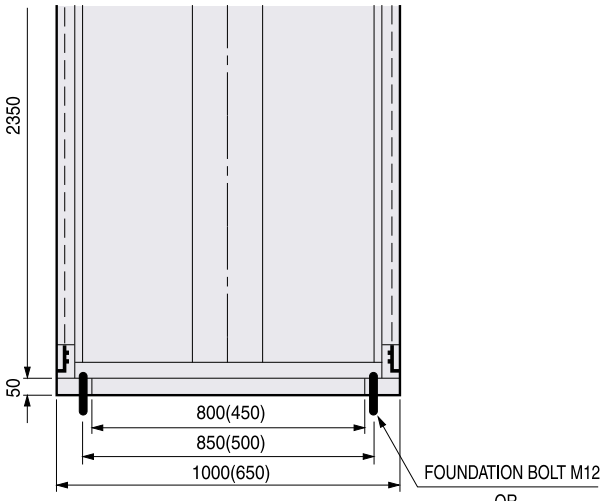


BASE PLAN

BASIC INSTALLATION DRAWING OF SOLUTION 2000 MCC

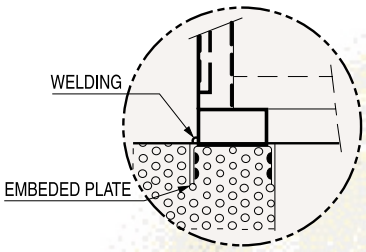


FRONT VIEW

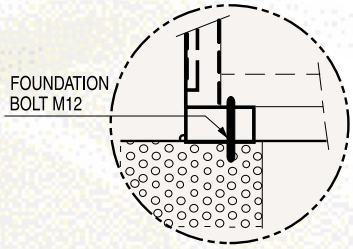


SIDE VIEW

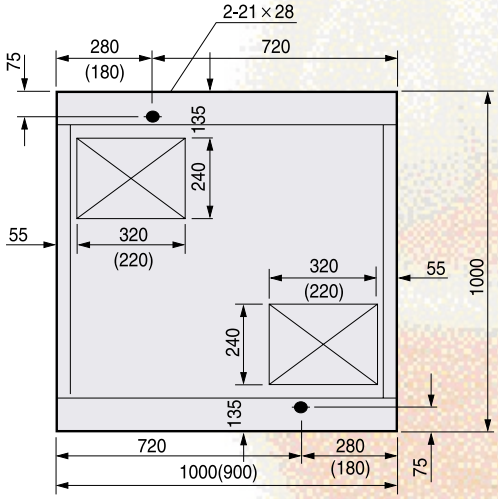
FIXED BY WELDING



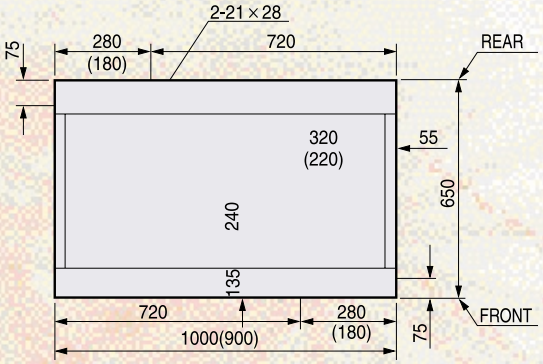
FIXED BY BOLTS



DOUBLE FRONT TYPE
PLANE VIEW OF BOTTOM



SINGLE FRONT TYPE
PLANE VIEW OF BOTTOM



NOTE

1. A side plate is installed at the end of the line-up.
2. The installation of MCC having bottom cable entries requires foundation with an opening of a cable duct.
3. The horizontal tolerance of the level should not exceed ±1mm over length of 1 meter.
4. The MCC can be welded or screwed to the foundation frame.
5. The maximun number of cubicles for transportation is 2.

Contents Index

STANDARD UNIT APPLICATION TABLE

Motor capacity(kW)		Rated	MCCB	Mag.	Thermal	A-CT		UNIT SIZE			Wire used	Remarks
440V	220V	Current	Type	Contactor	Relay	Ammeter Scale	CT (15VA)	NON-Reversible	Reversible	Y-△	(mm^2)	
0.2	-	0.5~0.8	ABL 53a or ABL 103a	CH-5 SMC-20P	TH-5N	0~5	5:5	H1(150)	H2(300)	H2(300)	5.5 (3.5)	1. Unit size is inclusive of 2 auxiliary relays (NOTE 3) 2. If NEMA size is applied to electro-magnetic contactor, the unit size can be changed.
0.4/0.54	0.2	0.8~1.7										
0.75	-	1.3~1.9										
1.1	0.4/0.54	1.7~2.8										
1.5	0.75	2.7~3.9										
2.2	1.1	3.8~4.9				0~10	10:5					
3.7	1.5	5.3~7.5										
-	2.2	7.6~9.3				0~15	15:5					
5.5	-	9~11										
7.5	3.7	12~15				0~20	20:5					
11	5.5	18~22		CH-6N SMC-25P	TH-1015N	0~30	30:5					
15	7.5	24~29.3		CH-7.5N SMC-35P		0~50	50:5				14	
18.5	-	30~34		CH-10N SMC-50P				H2(300)	H3(450)	H3(450)		
22	11	35~42				0~75	75:5					
30	15	48~56		CH-15N SMC-65P							22	
37	18.5	59~67		SMC-80P	TH-20N	0~100	100:5	H3(450)	H4(600)	H4(600)	38	
45	22	70~80	ABL 203a	GMC-100	GTH-100							
55	30	89~108		GMC-125	GTH-150	0~150	150:5				60	
75	37	117~134		GMC-150		0~200	200:5	H4(600)	H5(750)	H5(750)	80	
90/110	45/55	141~196	ABH 403a	GMC-220	GTH-220	0~300	300:5				2 ×60	
125	-	195~223		GMC-300				H5(750)	H6(900)	H6(900)	2 ×100	
150	75	235~268			GTH-400	0~400	400:5					

NOTE

1. The table is based on E-class insulation, 4 Pole closed-type low-voltage cage motor.
2. MCCB model can be changed according to breaking capacity of the system (The standard table is based on 65kA)
3. Applies to cases where there is no control transformer and there is two auxiliary relays.

LG constantly endeavors to improve our products, so that information in this catalog is subject to change without notice.

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